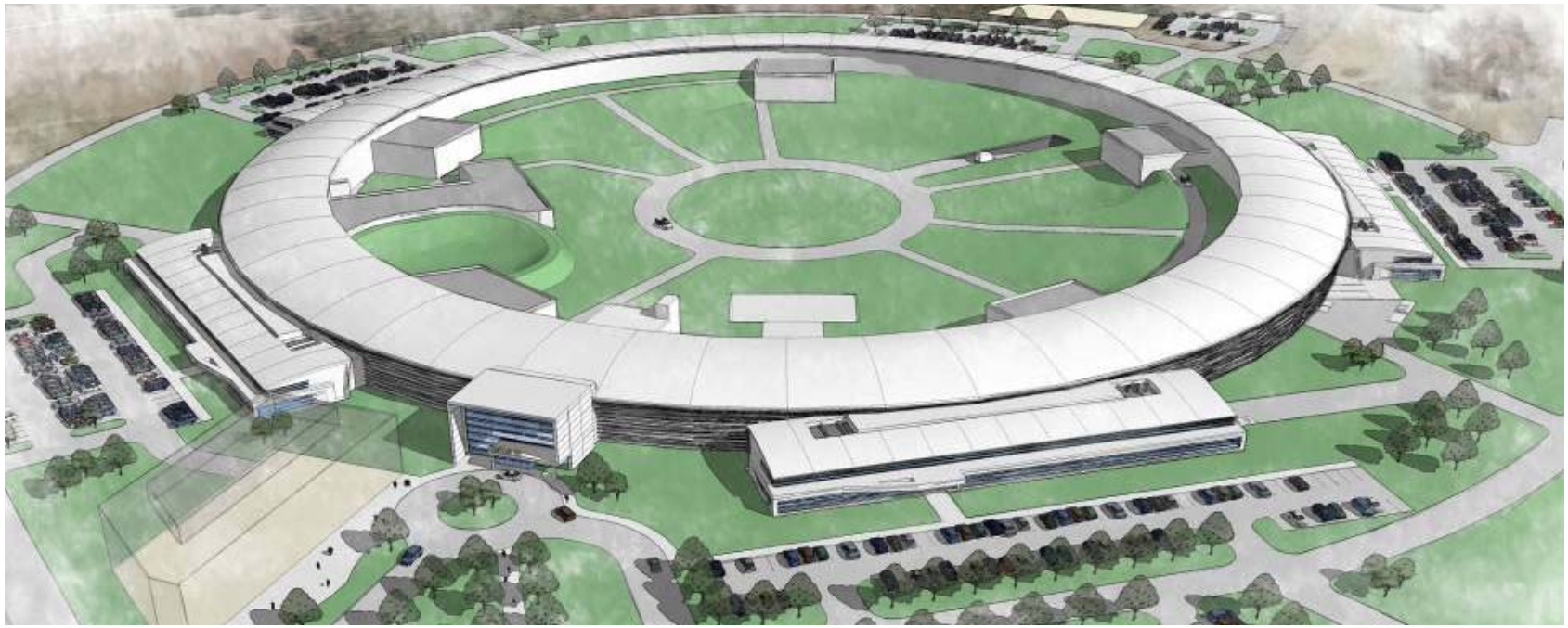
Beamline Advisory Team Process



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Introduction

- NSLS-II has the capacity for at least 58 beamlines that will meet the needs of a diverse, and vibrant, user community.
- Beamline development at NSLS-II needs to ensure that the appropriate capabilities are present at the facility:
  - We need to develop, with the users, a coherent, facility-wide plan that is responsive to the needs of the various communities. To be reviewed by our advisory committees.
- User access policy needs to ensure that the facility is as scientifically productive as possible

Guiding Philosophy

- NSLS-II has overall responsibility for operating all beamlines, ensuring that they are well integrated into the facility and with missions that are consistent with the overall strategic plan for the facility.
- The key to the delivery of outstanding science is rigorous peer review that is fair, clear, expedient and sensitive to the needs of users. The predominant mode of user access on all beamlines will be through peer-reviewed proposals, typically using the GU program of the facility.
- All beamlines will be well staffed (~ 6 FTEs) and resourced at a level appropriate with maintaining a high-level of technical and scientific quality.

Beamline Development

All beamlines to be developed using **Beamline Advisory Teams**

- Small teams formed by submitting a Letter of Intent (reviewed by EFAC)
- Propose scientific mission and technical requirements for beamline
- Facility hires beamline staff, designs & builds beamlines
- BAT meets every 6 months, working closely with the facility to advise them during design, construction, commissioning, and early operations
- Represent a particular User community
- Report to XFD Director

Letters of Intent

A brief proposal (10 page limit) from the BAT. Contains:

1. The scientific case for the beamline.

   Key scientific drivers for this beamline. How does NSLS-II impact this field. What unique capabilities will it provide and which scientific questions will these address?

2. The technical requirements and specifications of the beamline.

   What requirements flow from the scientific justification? (q-ranges, energy resolution, sample environments, need to take full undulator beam…).

3. How does it meet the needs of the user community?

   Documentation of User demand for the beamline. User workshops held. White papers written. Appendix: containing a list of supporters/potential users (not included in page count)

4. What source does it need and why?

   Discussion of performance and high level parameters. Choice of straight section.

5. Summary of Team members and their expertise.

   Brief description of what each member brings to the team.

   Appendix: One page bio for each member (not included in page count)

Criteria for Beamline Selection

- Excellence of scientific case and engagement of user community in its articulation
- Best-in-class performance, with characteristics well matched to NSLS-II source (meets or exceeds relevant world-wide benchmarks, based on realistic simulations)
- Technical feasibility of reaching scientific objectives
- Alignment with overall utilization of facility
- Quality of team

Letter of Intent (cont.)

Following the blessing of the LOI by the EFAC, the project would then assign resources to work with the BAT to develop the following:

1. Pre-Conceptual Design for Beamline

   Provides preliminary BL layout. More detailed requirements and specifications for the beamline. Identifies any particular design challenges that are beyond current state-of-the-art.

   - This already exists for the project beamlines.

2. Preliminary Cost Estimate

   Developed on the basis of the pre-conceptual design.

   - This already exists for project beamlines.

3. Alignment with NSLS-II Strategic Plan.

   Addresses the question of how this capability would fit in with the strategic vision for the facility. Interactions with other beamlines and other user communities, synergies, etc.

Beamline Development

- BAT process to be followed for all beamlines:
  - Project beamlines (Now)
  - MIE beamlines (CD-0 June 08, money in FY11)
  - Beamlines transferred from NSLS (money in FY 12)
  - Non-BES funded beamlines (Now)

Timeline

• LOI for 6 project beamlines	Feb 28th 2008
• EFAC review	March-April 2008
• Oral presentations to EFAC (2hrs?)	May 2008
• Recommendation by EFAC	May 2008
• Next round of LOIs due	August 1st 2008
• EFAC review	August-Sept 2008
• Oral presentations to EFAC	Oct 2008
• Recommendation by EFAC	Oct 2008

Beamline Operations

- Facility does all beamtime scheduling
- At operations, a Science Advisory Committee will be formed to advise on facility and beamline operations
- All NSLS-II beamlines will be reviewed annually by facility staff to rate each in the areas of technical quality, staffing factors and productivity. The metrics for these evaluations will be public and transparent. Results will be reviewed by the SAC.
- Full reviews of each beamline will be conducted by the SAC on a triennial basis

General User Access

- Every NSLS-II beamline will have at least 80% GU time
- Beamline scientists will write GU proposals
- GU proposals can be one time or program (2 year)
- Reviewed by committees of external scientists
- Evaluation criteria include:
  - Scientific Impact
  - Technique or Instrumentation Development
  - Industrial impact
  - National Security

Rapid Access

- An important component of the GU program will be rapid access for the high-throughput techniques
- Expected to be more important at NSLS-II with the reduced data-taking times and increase in the use of robotics
- Detailed RA mechanism may differ for different beamlines depending on technique
- Attention will be paid to minimizing any delays in the award of beamtime, and the barriers associated with proposal writing, while adhering to the basic principle that all beamtime allocations within the GU are peer-reviewed

Partner Users

- In addition to the BATs, the facility may also partner with various external Partner Users
- PUs are expected to bring additional capabilities to the facility, including contribution to operations, instrumentation, staffing, etc, and make them available to the GU community
- A PU might accomplish one or more of the following:
  - Develop a new capability or new instrumentation
  - Develop a beamline or dedicated end station
  - Build a new user community
  - Engage in education and/or outreach
  - Perform other activities outside the scope of the NSLS-II General User (GU) Program and deemed by SAC to be valuable to the NSLS-II user community

Partner Users

- The level of investment of a PU may rise to the level of developing and operating an entire beamline. Such PUs will be held to the same standard of operating support as facility beamlines
- PUs may negotiate beamtime to allocate to their members, commensurate with the level of their investment
- PU may choose to apply this allocation across several beamlines to access a range of capabilities
- Total PU beamtime on any one beamline will be a maximum of 20%
- The PU may use the GU program for allocating their beamtime, or some other facility-approved method
- PU members can also apply for GU time on any beamline, including those that they are involved in

Summary

- NSLS-II beamlines will be developed in concert with the user community through Beamline Advisory Teams and Partner Users
- They will be well staffed and maintained at state-of-the-art
- Access will be through peer-reviewed proposals
- This is your facility. This is your chance to define the suite of beamlines and capabilities you would like to see. We look forward to hearing from you!